

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is requested. Claims 16-18, 20, and 31-43 are in this application. Claim 16 has been amended. Claims 1-15, 19, and 21-30 have been cancelled. Claims 31-34 have been added to replace claims 9 and 13-15. Claims 35-43 have been added to alternately and additionally claim the present invention.

The Examiner rejected claims 9, 13-20, 23, and 25-30 under 35 U.S.C. §102(b) as being anticipated by Leach (U.S. Patent No. 5,640,299). The Examiner also rejected claims 23 and 24 under 35 U.S.C. §102(e) as being anticipated by Koizumi et al. (U.S. Patent No. 5,994,741). In addition, the Examiner objected to claim 22, which depends from claim 16, but indicated that this claim would be allowable if rewritten to be in independent form to include all of the limitations of the base claim and any intervening claims.

Claim 16 has been amended to include the limitation of claim 22, which has been cancelled. As a result, independent claim 16 is patentable for the same reason that claim 22 was patentable. In addition, dependent claims 17-18, 20, and 31-34 are patentable for the same reasons as claim 16. Further, claims 9, 13-15, 19, and 23-30 have been cancelled.

New claim 35 recites:

“a semiconductor region of a first conductivity type, the semiconductor region having a top surface;

“a first well of a second conductivity type that contacts the semiconductor region;

“a first connection region of the first conductivity type that contacts the first well;

“a second connection region of a second conductivity type that contacts the first well, the second connection region being electrically connected to the first connection region to have a same potential;

“a first trigger region of the second conductivity type that contacts the first well and the semiconductor region, the first trigger region being spaced

apart from the first and second connection regions, and having a dopant concentration that is substantially greater than a dopant concentration of the first well;

“a second well of the second conductivity type that contacts the semiconductor region;

“a third connection region of the first conductivity type that contacts the second well;

“a fourth connection region of the second conductivity type that contacts the second well, the fourth connection region being electrically connected to the third connection region to have a same potential;

“a second trigger region of the second conductivity type that contacts the second well and the semiconductor region, the second trigger region being spaced apart from the first trigger region and the third connection region, and having a dopant concentration that is substantially greater than a dopant concentration of the second well, no region of the first conductivity type lying between the first and second trigger regions; and

“a device region that overlies and contacts only the top surface of the semiconductor region between the first and second trigger regions, the device region being free of a gate, and not lying below a gate.”

With respect to Leach, applicant assumes the Examiner would read the p-substrate shown in FIG. 18 to be the semiconductor region required by claim 35, n-well 131 to be the first well required by claim 35, and n-well 133 to be the second well required by claim 35. Further, applicant assumes the Examiner would read p+ region 143 shown in FIG. 18 of Leach to be the first connection region required by claim 35, n+ region 141 to be the second connection region required by claim 35, and n+ region 145 to be the first trigger region of claim 35. In addition, applicant assumes the Examiner would read p+ region 149 shown in FIG. 18 of Leach to be the third connection region.

However, if the Examiner reads the limitations of claim 35 onto Leach in this manner, then there is no structure which can be read to be the second trigger region. As shown in FIG. 18 of Leach, n+ region 147 can not be read to be the second trigger region because n+ region 147 contacts p+ region 149 (read to be the third connection region). As noted above, claim 35 requires that the second trigger region be spaced apart from the third connection region. Thus, since n+ region 147

contacts p+ region 149, n+ region 147 can not be read to be the second trigger region.

In addition, as further shown in FIG. 18 of Leach, n+ region 151 can not be read to be the second trigger region because n+ region 147 lies between n+ region 151 and n+ region 145 (read to be the first trigger region). As noted above, claim 35 requires that no region of the first conductivity type lie between the first and second trigger regions. Thus, since n+ region 147 lies between n+ region 145 and n+ region 151, n+ region 151 can not be read to be the second trigger region. As a result, new claim 35 and dependent claims 36-43 are not anticipated by the Leach reference.

With respect to Koizumi, applicant assumes the Examiner would read the p-substrate 10 shown in FIG. 1 to be the semiconductor region required by claim 35, n-well 12 to be the first well required by claim 35, and n-well 14 to be the second well required by claim 35. Further, applicant assumes the Examiner would read p+ region 20-2 shown in FIG. 1 of Koizumi to be the first connection region required by claim 35 and n+ region 24-1 to be the second connection region required by claim 35.

However, if the Examiner reads the limitations of claim 35 onto Koizumi in this manner, then there is no structure which can be read to be the first trigger region. As shown in FIG. 1 of Koizumi, n+ region 24-2 can not be read to be the first trigger regions because n+ region 24-2 does not contact p- substrate 10 (read to be the semiconductor region). As noted above, claim 35 requires that the first trigger region contact the semiconductor region. Thus, since n+ region 24-2 does not contact semiconductor region 10, n+ region 24-2 can not be read to be the first trigger region of claim 35. As a result, new claim 35 and dependent claims 36-43 are not anticipated by the Koizumi reference.

Thus, for the foregoing reasons, it is submitted that all of the claims are in a condition for allowance. Therefore, the Examiner's early re-examination and reconsideration are requested.

Respectfully submitted,

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By:



Mark C. Pickering
Registration No. 36,239
Attorney for Assignee

P.O. Box 300
Petaluma, CA 94953-0300
Telephone: (707) 762-5500
Facsimile: (707) 762-5504
Customer No. 33402